

REMARKS

Claims 1-18 are pending in the application. New claims 19 and 20 have been added. Support for claims 19 and 20 can be found in the specification and drawings as originally filed. No new matter has been added.

Examiner Tran is thanked again for the courtesy extended to Applicants and Applicants' representatives in the telephone interview conducted on April 11, 2003. As indicated in the Interview summary, dated April 18, 2003, the Examiner suggested defining the core (3) having a groove for holding the tube and the configuration of core (3) to define over the prior art. Applicants have considered the Examiner's suggestion and have added independent claims 19 and 20 in accordance with his suggestion to further define the core (3) and define over the prior art.

New independent claim 19 is a method for manufacturing an aluminum cast product enclosing a pipe inserted within. A controlling member is projected into a cavity of a mold. A pipe is then arranged at a predetermined position in the cavity of the mold. A portion of the pipe is held in the cavity by receiving the portion of the pipe in a groove of a core member. A portion of the core is received within the cavity. The controlling member is inserted into at least one opening of the pipe or insertion of at least one end of the pipe in to a hole of the controlling member. A molten aluminum alloy is poured into the cavity so as to enclose the pipe with the aluminum alloy such that the pipe is free to move in an axial direction relative to the mold until the aluminum alloy hardens.

New independent claim 20 is also directed to a method for production of aluminum cast product enclosing a pipe within. A bracket having a hole to a pipe is coupled. The pipe is arranged at a predetermined position in a cavity of a mold. A portion of the pipe in the cavity is held by receiving the portion of the pipe in a groove of a core member. A portion of the core is received within the cavity. A controlling pin, which extends through a

wall of the mold to the cavity, is inserted into said hole of the bracket. A molten aluminum alloy is poured into the cavity so as to enclose the pipe with aluminum alloy, such that the pipe is free to move in an axial direction relative to the mold until the aluminum alloy hardens.

Claims 19 and 20 distinguish over the JP 4-294855 reference (hereinafter "the JP '855 reference") and FR 1.243.333 (hereinafter "the FR '333 reference"). Claims 19 and 20 define a step of holding a portion of the pipe in the cavity by receiving the portion of the pipe in a groove of a core member with a portion of the core received within the cavity. In addition to not teaching or suggesting a controlling member allowing for movement in an axial direction, neither the JP '855 reference nor the FR '333 reference teach or suggest having a portion of a core member received within the cavity or holding a portion of the pipe in the cavity by receiving the portion of the pipe in a groove of the core member. The JP '855 reference discloses fixing a pipe in a ceramic mold and using a concave portion for mounting the ends of the pipe. The JP '855 reference does not teach or suggest holding a portion of a pipe in a groove of a core member within the cavity. The FR '333 reference discloses a method of casting material around bent tubes, having tenons fixed to the outer surface of the tube. The FR '333 reference does not teach or suggest holding a portion of a pipe in a groove of a core member. For the foregoing reasons, the new claims distinguish over the JP '855 reference and the FR '833 reference.

Additionally, the amended claims in the Amendment, dated April 24, 2003, filed with the Request for Continued Examination, also distinguish over the JP '855 reference and the FR '333 reference. The tube in the JP '855 reference and the FR '333 reference do not teach or suggest the use of a controlling member and the allowance of axial dislocation in the absence of radial dislocation. Additionally, the JP '855 reference fails to teach or suggest pouring a molten aluminum alloy into the cavity to enclose the pipe with aluminum alloy,

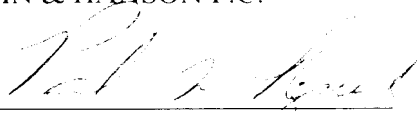
wherein the pipe is free to move in an axial direction relative to the mold until the aluminum alloy hardens. The JP '855 reference discloses fixing a pipe in a ceramic refractory. Additionally, the FR '333 reference teaches away from any movement, axially or radially. Page 4, lines 17-21 of the English translation of the FR '333 reference discloses that the tube is prevented from moving and that the open ends of the tube are completely sealed so that molten metal cannot penetrate the interior of the tubes. The controlling member of claims 17-18 of the present invention is configured to allow axial movement of the pipe without radial dislocation.

In view of the above amendments and remarks, Applicants respectfully request allowance of pending claims 1-20.

Respectfully submitted,

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